

Life Science 7

Chapter 11-1, 11-2

“Protists”

p 270-281

Objectives

- Describe the characteristics of protists.
- Name the three groups of protists, and give examples of each.
- Explain how protists reproduce.
- Describe some reasons why protists are important.

Kingdom Protista- General characteristics

- Diverse group, debate as to how to organize the kingdom
- All eukaryotic
- Includes:
 - _____ - fungus-like protists
 - _____ - plant-like protists
 - _____ - animal-like protists

-Mostly unicellular, however some algae are multicellular (ex: _____)

- Reproduction is mostly asexual through binary fission, however, some protists produce gametes and reproduce sexually
- Locomotion is varied,

Slime Molds

- All heterotrophic, feeding on dead/decaying organic matter
- Two major types
 - _____ **slime mold**: feeding stage is one big supercell, called a *plasmodium*
 - _____ **slime mold**: feeding stage is unicellular, when conditions are unfavorable, the individual cells form a plasmodium that produces spores

Water molds

- Live in _____.
- Some are decomposers, others are parasitic
 - **parasite**: _____

- ❑ One particular water mold caused the _____ in Ireland, which caused 1 million deaths and 1 million emigrations from Ireland between 1845-1852

Algae

- plant-like protists
- much variation, single celled-multicellular

- ❑ single-celled algae called _____
- mostly photosynthetic

“red algae” (**phylum Rhodophyta**)

- most _____, forming filaments or sheets
- cell walls “sticky”, substance used commercially
- red color helps them to live in _____
- used as a food source by humans (used to wrap _____, nori)
- some red algae have calcium carbonate in their cell walls, used to build coral reefs

“brown algae” (**phylum Phaeophyta**)

- multicellular
- largest algae (some can reach 60 meters)
- includes _____
 - ❑ kelp have differentiated cells, some form **blades**- leaf like, **stipes**- stem-like, **holdfasts**- root-like
- very important commercially and ecologically
 - contain a protein called **algin**, used to make ice cream, marshmallows, cosmetics
 - used for food
 - primary producer in many underwater ecosystems

“green algae” (**phylum Chlorophyta**)

- incredible variety- unicellular and multicellular forms (no tissue differentiation)
- some have flagella, others nonmotile
- many are symbionts, living in cells of invertebrates or lichens
- reproduce asexually by spore production, or sexually through flagellated gametes
- _____ may have evolved from green algae

“diatoms” (**phylum Bacillariophyta**)

- unicellular, few colonial
- cell walls contain silica, form unique intricate patterns
- reproduce asexually and sexually
- cell walls of dead diatoms used commercially for

- _____
- _____
- _____
- _____

“dinoflagellates” (**phylum Dinoflagellata**)

- unicellular, few colonial forms
- cells have 2 flagella, perpendicular to each other
- responsible for _____
 - caused when these algae form blooms
 - shellfish eat the algae, and concentrate the poison from the algae in their tissues
 - the shellfish then become toxic to other animals
 - fish can also be killed directly by the neurotoxins produced by these algae

Euglenoids

- **phylum Euglenophyta**
 - resemble both _____
 - photosynthetic, some heterotrophic also
 - motile (use a flagella)
- reproduce asexually through mitosis
- possess eyespots that _____
- possess a _____ to pump out excess water

Protozoans

- “ _____ ”
- heterotrophic, generally motile

Amoebalike Protists

- no definite body shape
- move by use of _____ - temporary extensions of the cytoplasm
- pseudopods also used in prey capture
- Some amoebas are _____ (ex: amebic dysentery)

Protozoans with shells

- Includes foramineferans and radiolarians
- Have arrays of slender pseudopods used for feeding
- shells of radiozoans composed of _____
- shells of foramineferans have _____ shells

Flagellates

- spherical or elongate bodies
- use _____ for locomotion
- may be free-living, parasitic, or mutualistic
 - ex: *Trichonympha*: lives within gut of termites
 - ex: *Trypanosoma*: human and tsetse fly parasite, causes _____
 - ex: *Giardia lamblia*: causes _____

Phylum Ciliophora (*Paramecium*)

- Most move through the use of _____
- heterotrophic, but may have symbiotic algae living inside them
- Multinucleate
 - **macronucleus**: larger nucleus that controls the functions of the *Paramecium*
 - **micronucleus**: smaller nucleus used to exchange genetic information during sexual reproduction (=_____)
- most motile, some remain attached to ocean floor and use cilia to sweep water/food into their “mouths”

Spore Forming Protists

- parasitic protozoa, many cause human disease
- locomotion through flexing of their bodies
- may develop into a resistant spore to infect the host
- ex: *Plasmodia*: causes malaria
 - kills more than _____per year, in spite of drugs available to treat it!